We have also appreciated that it is possible to pass material through a microwave cavity in a continuous stream, for a continuous treatment process. The microwave cavity has high electric field which in turn produces high power densities (e.g. 10^{15} Wm^{-3} or 10^{16} Wm^{-3} or more) and material can be made to move through high field strength electromagnetic waves, residing in the high intensity region for only a short time. This has the double benefit of increasing the throughput of materials through the treatment machine, and using the knowledge that we do not need to apply microwaves to materials for very long to achieve the desired effect. The two advantages have synergistic effect.

In some embodiments the method comprises creating a standing wave of microwaves in a cavity and ensuring that the composite material is disposed in the cavity at a position on or about a maximum intensity of the standing wave.

The method may have a guide means which guides the composite material to the position of a maxima of the standing wave.

According to another aspect of the invention we provide a method of weakening the bond between a first phase of material and a second phase of material in a multi-phase composite material comprising applying a high powered density of microwave, or high electric field strength microwaves, to the composite material for an exposure time that is of the order of a ½ or ¼ of a second or less.

the composite material for an exposure time that is of the order of ½ or ¼ second or less.

According to another aspect of the invention we provide a method of continuous processing of ore or rocks comprising applying high electric field strength microwaves to create high power densities, on a continuous basis to ore or rocks passing through a microwave cavity or zone to weaken the ore or rocks, and subsequently passing the continuous flow of ore or rocks to a mechanical treatment machine and mechanically breaking up the ore or rocks.

The microwaves may be pulsed, and applying them on a continuous basis is not meant to exclude repeated pulses of microwaves.

A reduction in overall energy consumption - quite a serious reduction – may be available if we pre-treat the ore or rocks with microwaves so as to weaken them and then break them up in a mechanical comminution process.

Moreover, a continuous process has a higher throughput, and can cope with higher volumes than batch processes. This makes the process even more economically attractive.

It is particularly elegant that once we have a high enough electric field strength we can then flow material (whether that be for weakening the bond between different phases, or other purposes) through the microwave field in a continuous manner at a rate that is fast enough to expose the material to the high intensity microwave for only a short time, (e.g. ½ or